yellow light than the flash-lamp-pumped pulsed dye laser. The copper vapor laser produces yellow light with a wavelength of 578 nm. This laser system is used in a quasi-continuous mode of operation; the individual pulses are so short—on the order of 20 nanoseconds—they appear to be emitted in continuous fashion. This laser system is unique in that it can actually produce a variable blend of yellow and green light, depending on the temperature of the elemental copper within the optical cavity. The benefit of using the extremely short pulses of light from the copper vapor laser for treating vascular lesions is that undesired thermal effects are limited by reducing the length of exposure.

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REFERENCES

Dixon JA, Rotering RH, Huether SE: Patient's evaluation of argon laser therapy of port-wine stain, decorative tattoo, and essential telangiectasia. Lasers Surg Med 1984; 4:181-190

Goldman L, Dreffer R: Laser treatment of extensive mixed cavernous and port-wine stains. Arch Dermatol 1977; 113:504-505

Goldman L, Taylor A, Putnam T: New developments with the heavy metal vapor lasers for the dermatologist. J Dermatol Surg Oncol 1987; 13:163-165

Scheibner A, Wheeland RG: Argon-pumped tunable dye laser therapy for facial port-wine stain hemangiomas in adults—A new technique using small spot size and minimal power. J Dermatol Surg Oncol 1989; 15:277-282

Tan OT, Sherwood K, Gilchrest BA: Treatment of children with port-wine stains using the flashlamp-pulsed tunable dye laser. N Engl J Med 1989; 320:416-421

Cutaneous Aspects of Child Abuse

CHILD ABUSE continues in epidemic proportions, and all health care professionals are increasingly called on to assist in its diagnosis. Because 90% of abused children have mucocutaneous signs, dermatologists often are involved in its assessment. Bruises, sexual abuse, and burns are the foremost findings in abused children. Atypical sites for accidental trauma such as the buttocks, inner thighs, and perigenital areas should raise suspicion, as should mucosal trauma. Linear, angular, and loop-shaped injuries are highly suggestive as well. A lack of concordance between the caretaker's story and the observed injury is typical of an abuse situation.

Recent well-publicized incidents of apparent overreporting and false accusation of adults by some children have done a disservice to the urgent need for all professionals to continue to participate in the reporting process. Although parents reported without apparent culpability understandably feel victimized by child abuse laws, we as professionals must not be influenced by such protestations and must continue to look with tunnel vision at each child's potential vulnerability in every case of suspected abuse. Suspicion is the key word because every state requires us to report suspected, not proved, cases of child abuse. Can a condition such as condyloma acuminatum, always considered sexually transmitted in adults, not be considered suspicious in a toddler? Even if only 10% to 25% of cases are proved to be associated with sexual abuse, this is still a notable number of children at risk. Careful but sensitive investigation of risk factors is indicated in each case, and most cases not readily attributed to birth canal exposure require reporting.

Numerous cutaneous and mucosal disorders have occasionally been falsely attributed to child abuse: the so-called pseudo-abuse syndromes. Examples include the palpable purpura of vasculitis, southeast Asian customs such as coin rubbing and cupping, phytophotodermatitis from various plant constituents, and anogenital changes due to streptococcal infections or lichen sclerosus et atrophicus. To avoid wrongfully accusing the caretaker in these situations, expert consultation is often required. Whereas pediatricians and social workers remain paramount in managing child abuse cases, dermatologists should be increasingly involved because of their unique training in diagnosing and treating disorders of skin and mucous membranes, as well as sexually transmitted diseases.

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REFERENCES

Jenny C, Kirby P, Fuquacy D: Genital lichen sclerosus mistaken for child sexual abuse. Pediatrics 1989; 83:597-599

Lane AT: Child abuse and neglect, *In* Schachner LA, Hansen RC (Eds): Pediatric Dermatology. New York, Churchill Livingstone, 1988

Raimer BG, Raimer SS, Hebeler JR: Cutaneous signs of child abuse. J Am Acad Dermatol 1981; 5:203-214

Schachner LA, Hankin D: Assessing child abuse in the dermatologist's office, *In* Callen J, Dahl M, Golitz L, et al (Eds): Advances in Dermatology—Vol 3. Chicago, Year Book Medical, 1988

Oral and Topical Cyclosporine Therapy for Psoriasis

ANALOGOUS TO the discovery and development of methotrexate therapy for psoriasis, cyclosporine was first found to be an effective treatment for the psoriatic skin lesions of patients who were being studied for the drug's effect on psoriatic arthritis. In the decade since then, many investigators have reported cyclosporine efficacy in treating psoriasis when given orally, using a variety of doses ranging from 1 to 14 mg per kg of body weight per day. The results of these studies have generally shown that two thirds or more of patients have had total or substantial clearing of psoriatic lesions. With cessation of therapy, however, psoriatic lesions have recurred rapidly—within weeks.

Cyclosporine is a potent drug, and its use in organ transplant patients in high doses has produced notable adverse effects. Since psoriasis is a benign but sometimes very severe non-life threatening disease, the long-term use of cyclosporine may be limited. Clinical success in treating psoriasis has been associated with the two main side effects also seen in organ transplant patients: nephrotoxicity and hypertension. These changes are both dose-dependent and reversible, yet obviously they will limit the potential for widespread use of this drug in patients with severe or extensive psoriasis unless very low doses with minimal or negligible toxicity can be effective. Patients with severe psoriasis are now treated with phototherapy, methotrexate, or etretinate (Tegison). Another drug with an acceptable benefit to risk ratio would be welcome. For patients with mild psoriasis, there is little or no justification in using oral cyclosporine.

At the research level, the effect of cyclosporine therapy on psoriasis has reopened the question of the pathogenesis of this disease. In the past, psoriasis was not seriously considered to be an immunologically related disease. Cyclosporine has forced a re-examination of this possibility based on some of the drug's suggested mechanisms of action on immunologic systems. In the skin these include suppression of T-lymphocyte cells, interference with epidermal antigen-presenting dendritic cells, or effects on inflammatory cells. The question of whether cyclosporine may directly inhibit epidermal cell proliferation has yielded conflicting answers. Much research is needed to explore more fully the mechanisms by which cyclosporine can cause disease resolution (but not cure).

The intriguing clinical effects of oral cyclosporine have led to obvious attempts at determining whether the drug will

work by topical administration. Biren and colleagues first reported the topical effects of cyclosporine on contact dermatitis in guinea pigs. Others have subsequently shown similar effects on the skin of small animals. At least three reports have failed to show clinical effectiveness in psoriatic patients when comparing topical cyclosporine to placebo preparations. Cyclosporine was used in 2% to 5% concentrations with generic cream or ointment preparations and tested for 1 to 2 months. The lack of topical effect suggests at least three possibilities: the drug works by a systemic effect rather than locally in the skin; cyclosporine could be metabolized in part, and a metabolite might be the active agent; or adequate quantities of cyclosporine do not penetrate into the active sites of the psoriatic lesions, whether they are in the epidermis or the dermis, or both. Evidence of a local effect has recently been shown using intralesional injections of cyclosporine, with the intravenous preparation (50 mg per ml) diluted with 2 parts normal saline. After six injections over two weeks, ten of ten patients had significant improvement with a reduction in mean clinical score from 9.0 to 2.5, while placebo-injected sites had no significant improvement (9.0 to 7.9). Thus, local delivery of cyclosporine by injection directly into skin lesions can produce clinical improvement. These results will provide more impetus toward developing topical preparations and to understanding the pharmacologic effects of the drug in treating psoriasis. A successful topical preparation will allow most psoriatic patients with minimal amounts of disease to be safely treated because systemic side effects would be unlikely from limited applications.

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REFERENCES

Baker BS, Powles AV, Savage CR, et al: Intralesional cyclosporine in psoriasis: Effects on T lymphocyte and dendritic cell subpopulations. Br J Dermatol 1989; 120:207-213

Biren C, Ganderup G, Lemus L, et al: Topical cyclosporine (CSA): Effect on contact dermatitis in guinea pigs (Abstr). Clin Res 1984; 32:136A

Gilhar A, Winterstein G, Golan DT: Topical cyclosporine in psoriasis (Letter). J Am Acad Dermatol 1988; 18:378-379

Mueller W, Herrmann B: Cyclosporine A for psoriasis (Letter). N Engl J Med 1979; 301:555

Oral Retinoids

IN THE PAST DECADE there has been a widening use of synthetic retinoids for treating various dermatologic diseases.

Isotretinoin (Accutane) continues to be indicated for and is often highly effective in treating severe nodulocystic and scarring inflammatory acne unresponsive to conventional therapy. Recently, however, isotretinoin was almost removed from the market by the Food and Drug Administration because of its teratogenicity. It is therefore essential to be fully aware of all the details of its use before initiating therapy, including careful screening of women of childbearing potential to rule out pregnancy. The manufacturer, Roche Laboratories, provides a step-by-step kit to guide physician and patient through the informed consent process to help insure patient safety. Two forms of adequate contraception are now advised for younger women taking Accutane, and careful counseling and follow-up to avoid pregnancies are essential.

Etretinate was approved in 1986 for treating severe recalcitrant psoriasis and exfoliative and generalized pustular psoriasis. In patients with recalcitrant plaque psoriasis, its optimal use is in combination with other types of treatment including phototherapy and psoralen plus ultraviolet A. Etretinate should not be used in women of childbearing age because the drug is lipid-bound and continues to be present in small but teratogenic levels for some years after discontinuation of the drug. As a result of this problem with etretinate, several clinical investigations have been conducted with the acid derivative of etretinate, known as acitretin. These studies show that acitretin has the efficacy and short-term toxicity of etretinate, but because it is more rapidly excreted, it could be considered for use in women of childbearing age with severe psoriasis providing the same care over contraception use and avoidance of pregnancy is exercised as with isotretinoin.

Other side effects of isotretinoin, etretinate, and acitretin include mucocutaneous drying, diffuse alopecia, fatigue, headaches, hepatotoxicity, lipid abnormalities, skeletal hyperostosis, pseudotumor cerebri, and myalgia.

Despite these side effects, the systemic retinoids are extremely valuable drugs that can be used in appropriately severe dermatologic diseases by physicians skilled in their use. Refinements on the basic retinoid structure are continuing to reduce the incidences of toxicity.

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REFERENCES

David M, Hodak E, Lowe NJ: Adverse effects of retinoids. Med Toxicol Adverse Drug Exp 1988; 3:273-288

Kingston TP, Matt L, Lowe NJ: Etretin therapy for severe psoriasis. Arch Dermatol 1987; 123:55-58

Peck GL, Yoder FW: Treatment of lamellar ichthyosis and other keratinizing diseases with an oral synthetic retinoid. Lancet 1976; 27:1172-1174

Shalita AR, Cunningham WJ, Leyden JJ, et al: Isotretinoin treatment of acne and related disorders: An update. J Am Acad Dermatol 1983; 9:629-638

Psychodermatology Update

PATIENTS WITH primary psychiatric disorders who see a physician because of the mistaken belief that they have real skin disorders pose some very difficult management issues. This difficulty is intensified by the fact that, as a rule, these patients lack psychological insight and will refuse a referral to a psychiatrist. This bleak situation has been improved recently by the availability of psychopharmacologic agents that have been found to be efficacious for these psychodermatologic problems. These medications can be classified into four categories: antipsychotic, antidepressant, antianxiety, and anticompulsive.

Pimozide (Orap) is an antipsychotic medication that has been especially useful for treating persons with delusions of parasitosis, where they develop a false belief that there are insects, worms, or other imaginary ectoparasites infesting their skin. The dose used to treat this condition ranges from 1 mg to 10 mg taken orally once a day. This is a potent drug whose main side effects are extrapyramidal symptoms such as akinesia (difficulty with initiating a movement), akathisia (restlessness), and dystonia (muscle and joint stiffness). These are usually controllable with anticholinergic medications such as benztropine mesylate (Cogentin), 2 mg by mouth four times a day, or diphenhydramine hydrochloride (Benadryl), 25 mg by mouth four times a day, as needed. Tardive dyskinesia may occur with long-term use of pimozide. For older patients, patients taking high doses, or patients with preexisting cardiac abnormalities, an electrocardiogram should be done before treatment and periodically during treatment, since pimozide may prolong the QT interval. Rare cases of unexpected death have occurred in patients taking doses of about 20 mg per day.